

BATH  
AND  
HER THERMAL WATERS  
—  
*CRADDOCK*

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“\*APIΣTON MEN \*ΥΔΩΡ.”

# BATH AND HER THERMAL WATERS:

A SCIENTIFIC AND RATIONAL VIEW OF  
THEIR USE IN DISEASE;

WITH

A SKETCH OF THE HISTORY OF BATH, A CHAPTER ON  
MASSAGE, AND A DESCRIPTION OF THE BATHS

BY

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TO  
SIR A. GARROD, M.D., F.R.S.

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DEAR SIR ALFRED,—

To you, as one of our most eminent Physicians, and the leading authority on Gout and Rheumatic Gout, independently of my personal regard for you, I feel it to be a great pleasure and privilege to dedicate the following pages.

I am sure you will regard my work with dispassionate consideration and friendly criticism, as that of one who is endeavouring to place medical treatment by the Bath Waters on a rational and incontrovertible basis.

That you may long be spared to enjoy your well-merited honours, is the sincere wish,

Dear Sir Alfred,

Of yours very sincerely,

SAML. CRADDOCK.

*1, Green Park, Bath, Oct. 1, 1889.*



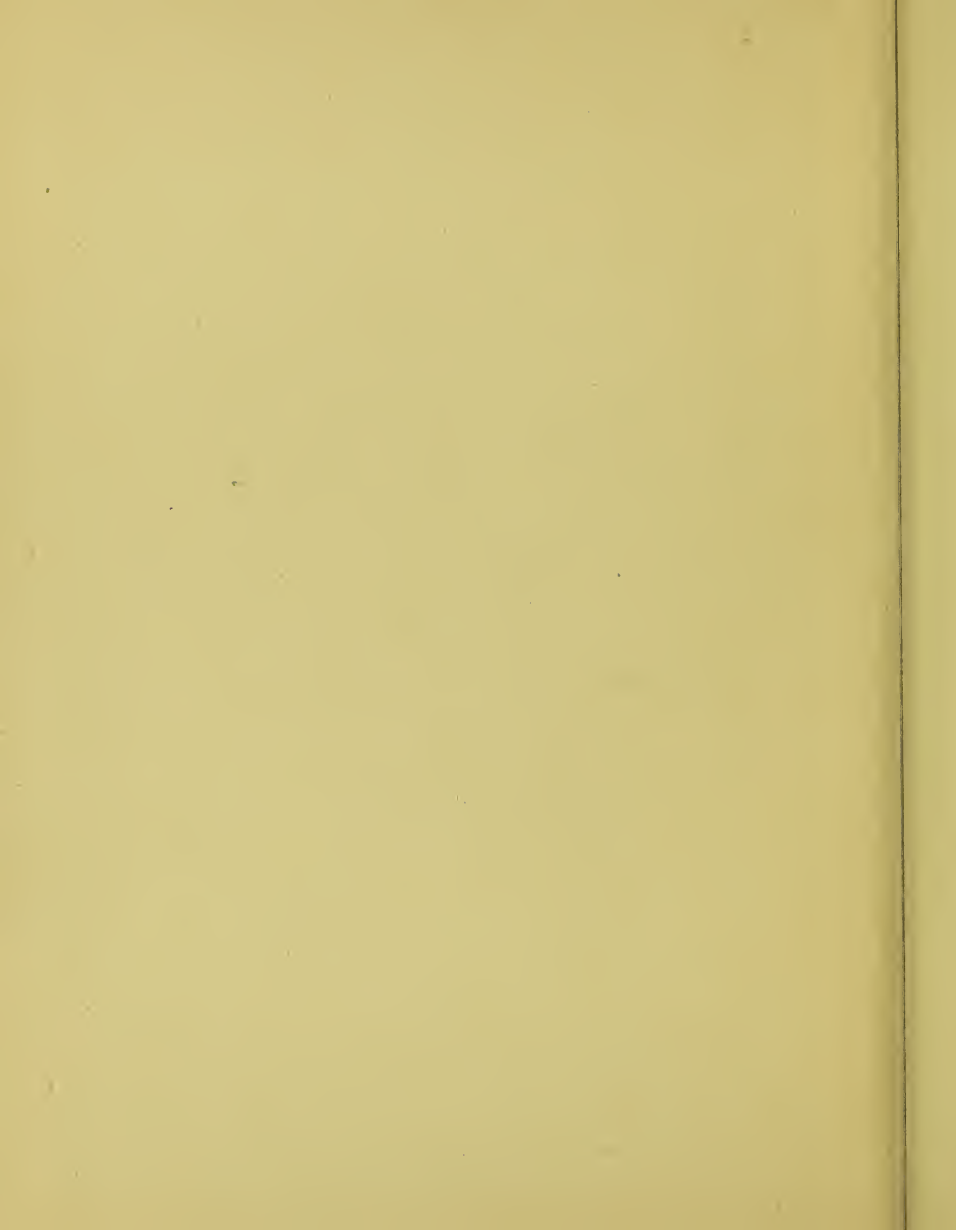


## P R E F A C E .

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In presenting for public consideration and medical criticism a Second Edition of my Paper read before the Bath and Bristol Branch of the British Medical Association, on "Bath and Her Thermal Waters," I have decided to leave the text on the Waters, with a few simple additions, the same as when delivered in December, 1888. A chapter on "Massage combined with the Thermal treatment," with a *raison d'être* for its use in those diseases under review, as well as chapters on the History of Bath and her Baths Past and Present, have been added. The criticisms by gentlemen of high professional standing on the first published edition have been so reassuring as to induce me to offer to the Public a Second Edition. I am further stimulated to do so by the fact that the experiments I have myself personally made of these Waters have for the first time in their history placed their application on a thoroughly scientific and practical basis. My thanks are due to Mr. Gatehouse, Public Analyst, for the many valuable analyses he has made, which have enabled me to frame deductions that could not otherwise have been drawn.

S. C.



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ERRATUM.—Page 48, line 15, for “History” read “Theory.”



# BATH.

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ATH is one of the most ancient cities in the Empire. Ordinary tradition associates its origin with the story of Bladud and his pigs, by whom the healing waters were discovered—a discovery which led to the founding of a great city. Bath, however, is not only a city of high antiquity, it is likewise a city which has played an important part, historically and socially, in the progress of the Empire. The tradition of Bladud\* is as much a myth as that of Jack the Giant Killer, or Romulus and Remus, and destined, it may be, to the same immortality. It is so associated with the history of Bath that from the time of Jones, who wrote and published a treatise on the Bath Waters in the time of Queen Elizabeth, to the present, no history of Bath has omitted it. The vitality of the story is indicative of the tendency in former times to ascribe natural phenomena

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\* The association of the pigs with the tradition is a modern innovation, having its origin in a ludicrous poem written by Henry Chapman in the reign of Charles II. It imposed upon Wood and Warner, and since their time many local historians and antiquaries have given currency to it as an original part of the legend of Bladud. This poem will be found in the posthumous edition of Guidott's Discourse on Bath, 1725. It is strange that the legend should never have been accurately traced until within the last ten years.

to a superstitious or miraculous origin.\* From the time of Elizabeth and down to the seventeenth century, the most preposterous theories prevailed with regard to the Waters and the observance of certain forms as to times and seasons in their use and application. The story of Bladud is not clear, for, as given by Geoffrey of Monmouth (temp. Henry I.), it consists of a mere chronological table, made up probably from earlier writers. If any Mayor or citizen of repute of this renowned city had doubted the history of Bladud down to a period as late as that of Wood the elder, who flourished in the earlier part of the last century, he would have been regarded as a lunatic. In his *Description of Bath* Wood gives such a minute and circumstantial account of Bladud's life and exploits that his reader would conclude that he witnessed what he describes.

The precise period when the Romans established their rule in the west and south-west, and especially in Bath,† is not certain; it is supposed to have been in the reign of Nero, A.D. 50. Coins of his reign were found in 1775. Other Roman coins, down to the reign of Valentine II. (A.D. 375, assas. 392), have also been found. The Romans, beyond doubt, were attracted to Bath by the Thermal Waters, which they formed into noble Baths.‡

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\* Professor Earle remarks—"A myth is not a fraudulent artifice, or a vain invention substituted in the place of real history—it is a story which somehow, nobody knows how, came to occupy the place of history in the popular belief."

† Earlier names of the city of Bath: British—Caer Palladur, Caer Badon, Caer Badin, Caer Gran, Caer yn Ennaint Twymyn. Latin—Aquæ Solis, Fontes Calidi, Thermæ, Badonia, Bathonia, Balnea, Badonessa, and other forms.

‡ Authorities on Roman Bath: Prebendary Scarth, Leland, Holinshed, Horsley, Guidott, Musgrave, Sutherland, Lucas, Warner, Lysons, Carter, Pownall, Wood, Collinson, &c. These are writers, each of whom wrote from an independent point of view, or illustrated some special branch of Roman archæology.

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There was nothing mythical about the Roman period. It is a vast reality, full of interest for all time. The contemplation of the fragments of architecture, with all its sculptured symbolism, coins, inscriptions, pottery, Samian ware, and that noble series of Baths which was discovered in the last century, and recently more fully developed, brings us face to face with the Roman city of Bath and its founders with all its ancient splendour. The chief edifices were grouped near to the principal source of attraction—the great luxury of the Romans—the hot springs. We cannot tell what the superstructure was like, but it must have been very vast and imposing. We can judge from the scale of the Baths what the conceptions of the Romans must have been with regard to proportion, order, and arrangement of their public edifices. On the site of the Abbey stood the Basilika, the temple of Diana occupied the site coincident with that of the present Pump Room,\* and opposite to that stood the great temple of Minerva, the presiding deity of the springs, on whose altar, as in the temple of Vesta at Rome, a fire was kept perpetually burning. Fragments of these temples are preserved in

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\* The most eminent authority opposed to the theory was the late Rev. John Whitaker, who contended that the temple of Minerva “actually stood upon the western half of the present Pump Room, ranging along the eastern side of Stall Street,” and he further contended that this temple afterwards became the Christian Church of St. Mary de Stalls, a contention supported by no sufficient evidence. The earliest incumbent of St. Mary de Stalls was *Robertus* in 1311, about the same period as that of St. Michael’s, *extra muros*, in the person of Henry de Forde. This fact, we admit, is not conclusive, but it is strong presumptive evidence, especially when, according to the same authority, John de Drokensford’s Register, many appointments are recorded in obscure villages of more than a century earlier. Prynne in his *Records* would not have missed a point of this sort in connection with Bath. Again, since Whitaker’s time certain fragments of the foundation of Stalls’ Church were found, which were not Roman, nor upon the site for which he contended.

the Royal Literary Institution; the Gorgon shield of the Portico and a fine bronze head of Minerva being conspicuous. The Forum occupied a portion of the present Abbey-yard, and extended over a considerable area towards the north.

Owing rather to political distractions at home than difficulties here, the Roman Emperors withdrew their legions in the beginning of the fifth century. The Picts and Scots embraced the opportunity to push their incursions into Britain,\* and to plunder and destroy its natives with unrelenting ferocity. In a moment of despair the British Belgic Chieftains invited to their aid the Saxons, who seized on the country they had been invited to defend, and succeeded in establishing their dominion here. Twice under King Arthur, it is said, the British defeated the Saxons on Mons Badonicus (possibly Beacon Hill); but at length the Saxons, under Cuthwin and Ceawlin, defeated the British Kings, Commail, Condidia, and Farinmail, at the Battle of Dyrham, and took Bath, Cirencester, and Gloucester, 577.†

The Saxons were excellent rulers, and besides the Charters they granted, they laid the foundations in all the large cities of those civic institutions which at a later epoch were revived and gradually developed into that system of

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\* After the departure of the Romans, the remnant of the ancient British race combined with the Belgæ, a people of Gaul, but of German origin, who spread themselves over Somerset, Hampshire, Dorset, and portions of Gloucestershire. The rule of the Belgæ was full of trouble and anarchy, so much so that it is sometimes referred to as "the period of desolation," extending over nearly two centuries.

† The Saxons called Bath by various names, Hat Bathun, Akemanncæsester or castra, or the Sick Man's City. These terms, as well as the Roman terms, are referable to a general nomenclature, but modified by usage and local dialects.



self-government which we at present enjoy. Bath, there is no doubt, during the 500 years of Saxon rule, made great progress. A mint was established, and the city was invested with the dignity, the luxury, and every attribute which marked it as a highly favoured western capital. Mr. Earle says :—"But the Saxon period is a spring of young life, wherein not the old is resuscitated, but a new existence starts forth on trial. If the career of cities may be likened to the individual life, we should say that the Roman period is dead and buried, like a departed generation, and that the Saxon age was the infancy of our modern development ;" and again, "the greatness which Bath attained in the Saxon period is mainly associated with its religious foundation ; the expansion which it received in the eighteenth century was due to its healing Waters."

After the Saxon subjugation, Osric, King or sub-regulus of the Huicci, with the consent of Kentwin, King of Wessex, founded a Nunnery at Bath, in the year 676, of which Bertana was the first Abbess. [This Nunnery soon acquired lands and other possessions. It was, however, burnt and pillaged by the Danes.] About the year 775 King Offa built the Church of St. Peter, and established a Monastery for Secular Canons. In the Church of Offa, in the year 973, Edgar the Peaceable was crowned, during the Abbacy of Elphage, and for three centuries the ecclesiastical establishment had experienced many vicissitudes. The Secular Monks were expelled by Dunstan, and a Convent of Benedictine Monks was introduced in their stead. The first Abbot of Bath, after the expulsion of the Seculars, was St. Elphage, who was born at Weston, and who in 1006 became Archbishop of Canterbury. In 1012

he was murdered by the Danes at Greenwich.\* Rufus seized the city, and in 1088 granted the See, and the city, and all its appurtenances to John de Villula, a French physician, for 500 marks of silver. De Villula took holy orders, was consecrated Bishop of Bath and Wells, and transferred the episcopal seat from Wells to Bath. Bishop John proved to be worthy of the position. He built a new Church on the site of the old one; restored the Monastery; was a great benefactor to the city; a patron of learning; began and completed many noble objects; lived a life of purity and honour; and dying on the 29th December, 1122, was buried in a tomb in the presbytery of his own Cathedral, in the ruins of which, Leland says, writing about 1540, "I saw lying there 9 yere sins, at which tyme at the Church that lay to wast and was onrofed, and wides grew about this John of Tours' sepulchre." John was succeeded by Godfrey as second Bishop of Bath, and he by Robert as third Bishop of Bath and first Bishop of Bath and Wells. After Bishop Robert, Bath ceased to be the Episcopal seat, and the ecclesiastical jurisdiction was placed under a Prior and an establishment of Monks, until the Reformation, when the whole of the revenues were confiscated. At the time of Leland's visit about 1531, the Church of John de Villula and the Monastery were almost in ruins, only a portion of the presbytery and choir remaining. The present Church was begun by Bishop King, A.D. 1498, completed (so far as it was completed) by Bishop Montague in 1616. The remains of Norman columns built into the foundation

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\* There is a legend on St. Elphage's well (situated near the racecourse), which was said to possess miraculous healing properties, and was sought eagerly in former "ages of faith" by religious pilgrims, as well as of love and of sorrow, in more modern times.

at the east end are portions of De Villula's Church, and may still be seen. On excavating some ground at the east end of the Abbey in 1869, the workmen came upon the old tile pavement of the Norman Church, the nave of which was co-extensive with the present Abbey. The pavement was of the trellis pattern, much worn and perished. Mr. Irvine made a drawing of the pavement, the date of which he gives at 1350 to 1360. It may have formed the floor of the chancel or of the tower. Level with the pavement, which is about six feet below the surface of the street, two stone coffins were found containing skeletons, in one of which a woollen fragment of the dress and the leather soles of the shoes in which the person was buried were found. The interment was of later date than the pavement. Several fragments of Samian ware were also discovered, some of them bearing the potters' marks, and also a portion of a large mortarium. The interior of the Abbey has been wholly restored. The work was begun in 1864, and completed in 1873, by the late Sir G. Gilbert Scott; the entire cost being about £30,000; of this sum the late Rev. C. Kemble and his family contributed about half. On covering over the nave with concrete, and making arrangements for the heating apparatus in the nave, several portions of the old Norman columns were discovered, which have been carefully preserved, and facilities provided by large moveable gratings for their inspection.

The cloth trade was carried on chiefly in Broad Street and Walcot or Woolcote Street, outside the walls, for nearly 400 years, until it was superseded by the superior enterprise of other parts of the West of England and the North. The trade and local government of the city were

regulated by Charters, enlarged by successive Monarchs. These Charters conferred certain privileges which secured to the city exceptional advantages. In 1574 Queen Elizabeth paid a State visit to the city. She directed great reforms in the civil and ecclesiastical administration of the city, and the Baths were rescued from the neglect and disorder into which they had fallen. The jurisdiction of the Mayor and Corporate body was restricted to the city within the walls. Sixteen years after the Queen's visit she granted a charter,\* extending the boundaries, and including St. Michael's and a portion of Walcot within the liberties of the city, and bringing them within its civil jurisdiction. This Charter, moreover, was so admirably framed that Bath was governed, and well governed, under its provisions, until the Municipal Reform Act of 1835. From the time of Queen Elizabeth's visit the modern history of Bath may be said to begin. One of the most distinguished men at this time, whose name will be always famous in local history, and the brightness of whose character will always be associated with Bath annals, was Sir John Harington. His house and park at Kelston were the admiration of his age, and his hospitality was dispensed with princely liberality and a

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\* This was not altogether a new charter. It was rather the revival and consolidation of existing charters. A translation of it will be found in the Appendix to Warner's History of Bath. It is chiefly to the sagacity of William Sherston, a wealthy clothier, that this privilege was obtained. He was wise enough to perceive that a more comprehensive and far-reaching measure of self-government would be secured by the revival and recognition of old and partly obsolete privileges when brought into harmony with the times, and blended with such provisions as were required by advancing civilization and the wants of the times. All that was good was retained; all that was wanted was added. Thus the measure was one of wise continuity. To the student of Bath History, Messrs. King and Watts's "*Bath Records*" are recommended.

graciousness of bearing, which rendered him what Professor Earle calls him the “good angel of Bath.”

The early part of the seventeenth century was tranquil and prosperous. The Baths were much frequented by the wealthy and the noble, but none of the characteristics of what we now understand as “fashionable life” had then developed themselves. The troubles which began in the second quarter of the century were not a little trying to the consistency of Bath, which was compelled to endure all the inconvenience of a fortified city, without the strength or position necessary to sustain the cause of either party. By turns Royalists and Parliamentarians, according as fortune favoured either of the belligerent parties, the city adopted a timid course; and it is a curious fact that, dreading the vengeance of the conquering party, the municipal government kept no records of the part it played in these times of Civil War. It is possible only to glance at an event in which Bath suffered so much during the Civil War. Bath was first garrisoned by the King, though it was twice kept by the Parliamentarians. On the 25th August, 1642, Charles raised the standard of war at Nottingham. Lord Hertford held Bath for the King, but being obliged to retire, Sir William Waller made the city his headquarters. On the northern slopes of Lansdown, July 5, 1643, was fought that famous battle between the forces of Waller, who led the Parliamentarians, and Sir Bevil Grenville, who commanded the Royalists. This battle will ever be remembered as one of the most gallant and obstinately contested of that bitter struggle. On that day, at the moment of victory, fell one of the most chivalrous men of his age, and the monument which marks the spot on which he received

his death wound was raised by George Grenville, Lord Lansdown, grandson of the hero, whose deeds it records. Sir Bevill was carried to the Rectory at Cold Ashton, where he died. Sir W. Waller retired with his troops in great disorder, and fell back upon Bath, which he evacuated the following day, and it remained in the hands of the Royalists until July 29, 1645, when it was recovered again, as is generally supposed, by an act of treachery. During these contests the citizens were loyal, and Fairfax punished them by heavy exactions. At this period Bath was represented by William Prynne, who was also its Recorder, an office of which he was deprived.\* He was educated at the Grammar School, was a man of great learning, energy, and diligence. He began by opposing the Court and the Government—he suffered accordingly. At the downfall of the Monarchy his sentences were revoked. When he perceived that the Parliamentary faction was aiming at the destruction of the Constitution, he forgot all his bitter wrongs and became one of the staunchest adherents of Monarchy. He protested against the King's death, and suffered worse at the hands of Cromwell than he had done at the hands of Charles. On the death of Cromwell, Prynne was again restored to the Recordership, and, in spite of H. Chapman's rancorous opposition, was again elected as one of the representatives of the city, his colleague being Alexander Popham. Prynne was satisfied with the office of Keeper of the Records, in connection with which he left ample testimony of his research, learning and unprecedented industry. At the Restoration, Bath again resumed the even tenor of her ways ; the prosperity which had received a temporary

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\* See Memoirs of Prynne, in Mr. Peach's *Annals of Swainswick*



check during the rebellion was revived. In 1663, Charles II. and his Queen (Catherine of Braganza) came to Bath for the use of the Baths. It is said that it was on this occasion the Waters were first used internally. The statement is not borne out by historical evidence, but it is clear that after that time they were more systematically prescribed for internal use. James II. and his second wife (Mary of Modena) also visited Bath in 1687.\* In 1692, the Princess Anne, accompanied by her husband, Prince George of Denmark, made a long stay in the city; and after her accession to the throne, in 1702, she marked her sense of the kindness and hospitality shown to her by the citizens on the former occasion, by paying it a second visit with great state and ceremony.† These Royal visits, it is needless to say, caused Bath to become the resort of invalids for the Baths, to an extent never before experienced. But circumstances gradually were developing a phase of society and social life quite new to Bath, and quite distinct from the tranquil and monotonous life, which was the peculiar characteristic of the city, until

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\* It should be noted that these two Royal parties were received in the old monastic mansion, which was now called the Abbey House, and was occupied by Dr. Peirce for the reception of eminent patients. Mary of Modena gained golden opinions from the citizens by her gentle and gracious manners and her "sweet countenance." In her later years she is thus spoken of, in the Life of Princess Charlotte Elizabeth, cousin of George I., and granddaughter of Elizabeth of Bohemia: "Mary of Modena, 'very thin, with a long face, bright eyes, large white teeth, and a pale complexion, which showed all the more because she never used rouge,' and 'leading the existence of an angel here for the last twenty-four years under our eyes,'"—that is the Court of France.

† At the Queen's Coronation, one of the most imposing and joyous ceremonies ever recorded took place; and on this particular visit the proceedings were characterised by a novelty of ceremony seldom witnessed, 200 young maidens, in pretty attire, meeting Her Majesty on Lansdown and preceding her to the West Gate.—See Bath, Old and New.

then chiefly occupied by the valetudinarian and the invalid. The City of the Warm Vale was soon to be as attractive to the pleasure as to the health-seeker. The reaction which followed the Commonwealth, during the reign of Charles II., had now reached its culminating stage, for reasons not easy to explain. Bath became the great cynosure of the fashionable rake, the *demi-monde*, and the unprincipled gambler. The age which produced what then was a new source of excitement and unalloyed amusement, pleasure, and gaiety, soon produced the man to guide and profit by them.

### BEAU NASH.

This combination of the charlatan, gambler, and fashionable leader was born in Swansea, October 18, 1674. His father was a partner in a firm of glass-makers in that town; his mother was sister to Colonel Poyer, who defended Pembroke Castle, and was executed by Cromwell. Nash went to school at Carmarthen, and from thence to Jesus College, Oxford. He was destined for the law, but the only knowledge he obtained of the law was the most ingenious method of evading or breaking it. He was a libertine before he was 17, and it is not surprising that he left Oxford with a large knowledge only of those matters of which he should have been ignorant. He tried the army as a profession, and gave it up before it gave him up. He then entered the Temple as a student, and soon acquired a very profound knowledge of pleasure and vice, and what is commonly called the world, which meant then, as it means now, that he had acquired a knowledge of many things, of which he would have been better to have remained in ignorance.



When King William visited the Middle Temple Nash became Master of the Ceremonies ; he was a genius in his line, but the line was not exalted. True, the King offered to knight him, but he declined the honour, because (as he told the King) he had no fortune to support the dignity. The King did not take the hint by giving him an income. It was not William's way. Goldsmith dwells upon his love of finery, frilled shirts and those virtues which the proverb says are next to godliness—cleanliness, with which no fault can be found. Certainly that was a virtue—a virtue easily imitated by most men who prefer cleanliness to dirt. Nash came to Bath about 1703, and for a time lived by his wits, wits sharpened by an empty pocket and a shabby wardrobe. At that time a Captain Webster was the Master of the Ceremonies, the first ever appointed. The ceremonies were usually drunken orgies, in which both sexes, under the able leadership of Webster, greatly distinguished themselves. Nash for a time played a subordinate part to Webster. Webster was a *roué*, a gambler, with no other means than what he got by his wits. In Webster's time society was demoralized by the reaction from the Puritan severities, and Webster was a coarse type of the coarse men of the time. The scenes sometimes in Bath were such as one would be surprised to see now at a village fair. Dancing was usually held in a tent, except on occasions of unusual importance, when the "assemblies" took place in the old Guildhall (built by Inigo Jones). When Nash, by stratagem and impudence, succeeded Webster he showed some of the qualities necessary to reduce these vulgar elements into order. Ignorant and illiterate as he was he possessed just the qualities which enabled him to attack the unruly of

both sexes with success—an impregnable conceit and undaunted audacity. Nothing abashed him nor induced him to swerve from his purpose. The rules he drew up for the government of society (which can be read in the longer Guides) were thought at that time to be witty and caustic. They were vulgar, ungrammatical, offensive, and characterized by “obtrusive waggy.” Neither rank nor sex shielded from his displeasure an offender against his laws. A royal princess\* pleaded in vain for “one dance more,” and an all powerful duchess† took off an apron which cost £500 at his bidding ; he had interdicted the wearing of aprons as being only fit for Abigails.‡ Men who had been in the habit of getting drunk, fighting and blaspheming, he curbed, checked, and civilized on the surface, that is, he veneered them. Top boots in the ball-room, the emblem of the grand gentleman, were regarded by Nash as fit only for coachmen and highwaymen, and in that he was right. He, in fact, was a king after the order of Jeroboam. The public life of Bath was orderly, gay, brilliant, and the laws of the King were rigidly kept. So far this ungainly, over-dressed, self-contained monarch, who in the present day would be scorned and treated with contempt, ruled his subjects with a rod of iron. All was fair outside ; all was loathsome within.§ In private he gambled. He had a gambling house, from which he drew the profits. He

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\* Princess Amelia.

† The Duchess of Queensberry.

‡ He was said to have had a toleration even for Abigails away from the assemblies.

§ This applies solely to the one phase of society of which we are writing. There was another element of society, the society depicted by Jane Austen, and that by Fielding and Smollett.

sent the pigeons, his man Wiltshire \* plucked them. He pulled a long face at church, and held the bag for charity, whilst in private he scoffed and railed, unless he was ill, and then he was afraid lest the great Master should fetch him. He was at the bottom of many discreditable intrigues, and yet it must be admitted that he was generous to the poor and distressed, and his conduct in promoting the establishment of the Water Hospital entitles him to lasting gratitude. Nash's epoch was born of a rigid, unnatural, unwholesome puritanism. It is difficult to know which is more to be dreaded and despised—the restraint upon all amusements, or the results which flow from unnatural restraint—the inevitable reaction, the excess which follows the repression of rational enjoyment, even in moderation and propriety. Nash's times are not to be admired ; they left traditions around which a false halo has gathered, and it has been too much the fashion to ascribe to Nash the glory of raising up this beautiful city, instead of to the group of noble citizens who flourished as his contemporaries—Wood, Allen, and others. Nash died in 1761, at the age of 87. His later years were embittered by poverty. In his helpless senility he had no friends to cheer him, and no comforts to mitigate his gloomy existence. In health he was a vaunting scoffer, but in the presence of death he was appalled by craven fear of the coming future. During Nash's reign his kingdom was undivided. Ten years after his death, which took place in 1771, the Assembly Rooms were built, the Lower Rooms occupying the site of the Royal Literary Institution. Nash was succeeded by Collett, who in

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\* Of the then Rooms.

turn was succeeded by Samuel Derrick, a man of small stature and by no means of the humility of Zaccheus. He was a man of literary taste, but with feeble intellectual powers. The senility of Nash had for some time incapacitated him from the exercise of regal powers and regal authority, so that the accession of Collett and then Derrick to the throne did not provoke such invidious comparisons as if they had succeeded the great Monarch in the plenitude of his glory. The building of the Assembly Rooms, with all their superior accommodation, at once led to the setting up of a rival kingdom, and then began the great battle of the Rooms.\* From this time until 1820 there were two M.C.'s. In that year the Lower Rooms were destroyed by fire, and then the "Kingdom of Cappadocia" was again united under one august head, and continued so to be until its final extinction a few years ago. What the nature of the government at the present time may be it would be difficult to say. Perhaps the term which would most accurately characterise it would be "an aristocratic Republic." Old things have passed away; all things have become new, and amidst all the mutations of mundane matters nothing has changed more completely than "fashionable" society. A coterie of ladies and gentlemen in these days would not be seen to speak to a man like Beau Nash. The times are changed, and with that change the estimate of manners is changed also. A well-bred man would scarcely look at an over-dressed ignorant dandy in these days. Nash's low wit, his *double entendre*, his ignorance, and

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\* See appendix to "Rambles about Bath," edited by R. E. Peach.

his arrogance would be intolerable now in the society of well-bred ladies and gentlemen. But those—and there are many—who still believe that Bath owes its prosperity in the past or the present to Beau Nash, are greatly mistaken. Whatever credit is due to Nash it is as nothing compared with that due to others. A variety of circumstances in the last century combined to render Bath the most attractive city in the kingdom, apart altogether from its amusements, its gambling and gambolling. The Waters attracted the suffering invalid, and the statesman, the poet, and the *litterateur* derived health and renewed vigour from their use. As the genius of Wood, backed by the enterprise of the citizens, raised up, as by the magic wand, those buildings which constitute “classic Bath,” and which will be admired as models of architectural beauty for all time, so Bath became a great residential city. Bath really at this time was a remote “West-end” of London. It was fashionable, in a sense, other than is usually understood by the phrase. “Everybody” visited Bath because it afforded them, as it does now, all the elements of a refined existence, with the tranquillity, rest, and climate so essential to that class of persons who sought relaxation from over-worked brain, or who, from whatever cause, wished to be “free from the madding crowd,” or who sought a change from the monotony of country life. This class of society formed a distinct element altogether from the pure pleasure-seeker.\*

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\* There are still to be heard the grumblings of certain people of the “dulness” of Bath. The answer to it is that the “dulness” complained of is, not that there is less rational and real enjoyment than in most other places, but that there are not more loud and coarse exhibitions in public and private life. In many respects there are features of public life—sources of enjoyment,

There was no clashing between these two parties ; each went its own way. The pleasure-seekers and the gamblers, and those who had no other calling than the ball-room, gambled and danced to their hearts' content. The other stratum was the basis of modern Bath, which, with its population of 54,000 inhabitants, may be regarded as the largest residential city in the kingdom.

## THE BATHS & THE RENAISSANCE.

In 1673, "Henry Chapman Gent" published "*Thermæ Redivivæ : a Treatise on Bath and those Sovereign Waters, both as to the Bathing in and the Drinking of them ; now so much in use,*" which he dedicated to Charles II., that "Dread and Royal Sir and Sovereign" (whom he had opposed, and whose father he had vilified), in terms which do more credit to his discretion than to his consistency and independence. The work is valuable as giving a perfect picture of the city at that period, and a trustworthy account of the Baths and Mineral Waters, the use and application of which had received a great stimulus from the visit of the King and Queen. There was, in fact, a revival from a century of previous neglect, and then arose a generation of notable physicians, the like of which was never known before—Greaves, Guidott, Peirce, Venner,

artistic, literary, and intellectual, greatly neglected. There is room in this direction for enterprise and improvement. Everything else is just what society chooses to have it. Society prefers tranquillity in our streets to noise and disorder ; it prefers the calm security of our streets to the packed and jostling crowds of big manufacturing places. If it were possible to bring in the multitudes, the character of Bath might be changed, but the change would be ruin. It is a great residential place for the invalid as well as for the robust and healthy who prefer spending their lives in a place which combines, as no other city does, the freshness of the country with the advantages of a first-class city.



Jorden, Bave, Maplet, and others, of whom the reader may learn much from the pages of Guidott and Wood's *Athen. Oxon.* From this time to the end of the next century a succession of eminent physicians flourished in Bath. It would be surprising indeed if, in the course of that period, the Waters had not experienced many vicissitudes; sometimes they were "all the rage," and occasionally they were neglected for the Spas of the Continent.

### MODERN BATH.

When Wood describes modern Bath, the work of his own creation, whatever exception may be taken to his literary style, quaint and archaic diction, and boundless egotism, he leaves an impression of his great personal merits, enthusiasm, indomitable energy, and genius. Prior Park alone, as it was, had it been his only work, would have been a monument of architectural skill, not only in design but in its method of construction and masterly arrangements. The famous description of Bath in Lord Macaulay's *History* is taken from Wood's preface without acknowledgment. There was much exaggeration in Wood's representation of the city at the period to which he refers, but he was, unconsciously, no doubt, led away by his desire to contrast the Bath of the past with the Bath he had done so much to bring into existence. The parallel which so well suited Lord Macaulay's purpose to "point a moral" and establish a favourite theory was not sustained by the facts. The portions of "old Bath" selected for comparison with the new were not in the same order or relative category. There was some architectural beauty and no little internal comfort and dignity in those quiet

old mansions of the 15th, 16th, and 17th centuries, until the exigencies of modern expansion and progress called for their entire removal, or for the excision of their picturesque façades which destroyed their character and reduced them to sheer masses of common-place ugliness.\* Where Wood first began his work, in the lower part of the city, notwithstanding the classic simplicity and dignity of the houses, it has long since exhibited symptoms of shabbiness, neglect, and squalor. Of the Roman walls surrounding the Roman city we do not know much,† beyond the fact that they were of prodigious strength, and that much of the material and quaint sculptured and engraved figures were used in the mediæval walls by which they were succeeded and which occupied almost the identical lines of the earlier circumvallation. When the mediæval walls were destroyed in 1755, the figures were carefully preserved, and are at present deposited in the Royal Literary Institution. The walls, with some insignificant exceptions, received less considerate treatment, being removed with remorseless iconoclasm. It was an "age of progress" in Bath. All things had waxed old; all things were to become new. Wood was bent upon his grand scheme of making Bath a city of palaces, and yet he might have left here and there characteristic fragments of that grand old wall and portions of the West-gate, which had been the residence of many of our kings, queens, princes, and princesses, to speak to future generations of a past history of fifteen

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\* The necessity for this arose from the excessive narrowness of the streets, which, running as they did, it was necessary to preserve and to adapt to modern traffic.

† See Warner's *Roman Antiquities and Prebendary Scarth's Aquæ Solis*. Portions of the foundations have been discovered in places, which were very massive, of prodigious strength, and embedded in cement.



hundred years. Striking, however, as are all the monumental antiquities that have been preserved to us, they do not exercise such an influence on the mind and the imagination as the Roman Baths. The Bath of Wood, as we see and admire it to-day, after the Parades, began with Queen Square, extended to the Circus, and was continued by his son.\* Within our circumscribed limits on the subject we cannot say more. We have, perhaps, said enough for our purpose.

### PROGRESS.

Until the eighteenth century there was no public hospital affording a school for "water practice" except the Lepers' Hospital, which, before it merged into Bellott's, had long ceased to serve any really useful purpose. When leprosy became extinct it was occasionally used for vagrants. In the early part of the century, as in the previous, there was no lack of eminent medical men. After Guidott and Peirce (the two ablest Physicians of the seventeenth century, notwithstanding their personal antagonism), succeeded Dr. John Wynter, a physician of considerable eminence and learning. In his work, 1727, addressed to Dr. Freind, he directed his attention to the principles of therapeutics which those two physicians and others had done so much to establish, in contradistinction to the extravagant and empirical treatment which preceded and still continued to characterize the methods of many of their contemporaries. Both Guidott and Peirce had done much in their practice, by reason of their

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\* Obviously, when we speak of Wood's Bath we do so in a limited sense. Much that has been added to it since the second John Wood is good, whilst much is an accretion of unmitigated ugliness.

common sense and close observation, to break down the old prejudices and to remove the superstitious nonsense and ignorance with which they had to deal. Wynter says, in terms which seem almost prophetic of recent events,—

“It is evident, that upon reviving the usage of drinking the Bath Waters (54 years since), the chief intention the practitioners had then in view from it was purging merely; as not only the large quantities, from five to ten pints, by them prescribed for that purpose testify, but that according to \* ancient custom they gave the patients salt, whenever the quantity had not the wished for effect of opening the body, and passing off by stool. The Aix-la-Chapelle Waters are drunk at this day, more as purgers and preparatives for the spaw than as alterative and curative themselves.

“But we labour not under this inconvenience, Providence having allotted this island but one hot Sulphur-Water, has been so indulgent as to fit that one to both inward and outward use, in a manner rather to be admired than described. All, therefore, that I aim at, all that I wish and endeavour, is the union of bathing and drinking. To separate them is doing an injustice to the Waters, our patients, and ourselves.

“Methinks I see the day, wherein the reciprocal force of these two, each of which I have observed has singly maintained the credit of these Waters, shall advance their character and fame beyond all bounds; and this I promise myself with the greater assurance, from the thorough knowledge and the consequent good opinion which both Dr. Mead (whose favours I can never too often acknowledge) and yourself, who received personal benefit here, have conceived of our hot Waters. There shall come the time when no party piques, no private resentments, no affectation of novelty, shall be able to withstand the glaring evidence of mighty cures. There shall come the day when, under your care and direction, Queens and Princesses shall visit these Baths, as many of their Royal predecessors have done.

“But these Waters, we all know, want no man’s panegyrick, was he never so eloquent. . . . Their sound is already gone out into all lands; they spring up each day with fresh † healing in their

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\* Plinii Cap. 6. Lib. 31.

† Hinc sine tormento cura, sine horrore remedia, sanitas impunita, &c. Cassiodor., Lib. 2, varier. Formul, 29, de Apono.

wings ; their works speak for them ; and where so much solid and intrinsic worth abounds, as in both, we may praise but cannot flatter."

The great work of the century, in connection with the Thermal Waters, beyond all doubt, was the building and endowment of the Royal Mineral Water Hospital. Good in itself, almost beyond the power of language to express ; good in making known far and wide the Waters themselves ; it was good also in superseding the pauperising tendencies of eleemosynary and irregular efforts to relieve the suffering poor. It will, moreover, be ever associated with the names of some of the most enlightened and active philanthropists of the day, from the time it was projected, in 1711, until its completion, in 1742, and until now. The second Dr. Oliver, Edward Harington, David Hartley, Henry Harington, and others, are names which will ever find a place in the annals of Bath and its Thermal Waters, and amongst its honoured citizens.

True, little was done to improve the old Baths until Wood, the younger, built the Hot Baths in 1777, the Royal Private Baths being built a year later. It is scarcely possible to conceive a greater contrast, even at that date, between the comparative luxury and cleanliness of the Baths and the rude, dirty, exposed condition of those preceding them. Imagine, at the present time, such a contrast. At the end of the century, when Europe was over-run with the revolutionary troops of France, Bath was again crowded by "the fashionable world," who were driven home by stress of war. The present may be regarded as another revival. Until the close of the war in 1815 the old "rule of thumb" or conventional treatment of bathing and water-drinking, to some extent, still pre-

vailed. After that time science had revealed qualities and impregnations in the Waters which greatly enlarged their application and usefulness. A race of Physicians grew up with the century, whose treatises were very different from the dry old-fashioned disquisitions of their predecessors. Successive analyses of the Bath Waters by eminent chemists including Roscoe, Attfield, Ekin, and others, show the presence of ingredients never before suspected. Formerly, *i.e.*, as late as 1815, the bathing was to the suffering cripple almost as difficult as that of old in the Pool of Bethesda. The Waters, indeed, were always "troubled," always present in abundance ; but the appliances were defective and the accommodation indifferent. The truth is the authorities had become careless. The success to which we have referred had encouraged them to think it must always be so. As soon, however, as the Continent was again open it became the rage for the rich and fashionable people to visit foreign Spas, regardless of the far greater blessing they had at their own doors. "Are not the Waters of Germany and France better than all the Waters of Bath?" The practical experience of recent years has answered this question in the negative. At no former period of Bath's history have the Thermal Waters been so much in use as at the present time ; the number of bathers and the number of cures effected by their use has no parallel in the annals of the city. No "revival" of the past will bear comparison with the present. Nor is this all. It is not merely that English people who are afflicted in various ways recognise the beneficent curative Waters of Bath ; but the Corporation (backed by the citizens) have fully risen to their responsibilities in connection therewith. They are the legal guardians of treasures unspeakably important, and

there is no luxury, no appliance, no machinery which has not been provided, to enable the most helpless cripples to descend into the pool, always "troubled" for them, to alleviate their pains, restore their energies, and renew their capacity to enjoy life, which had become a burden to them. It is not a vain boast, but a fact universally admitted, that the Baths of Bath are now the finest in Europe. The care bestowed upon them during the past thirty years has done much to commend them to the "faculty" at home and abroad. The construction of the Baths in connection with the Grand Pump Room Hotel is an advantage which cannot be over-estimated. Already, although they have added largely, almost two-fold, to the former bathing establishments, it has been found necessary to enlarge them. The prediction that they would simply cause the desertion of the older baths, and fail to increase the number of bathers, has not been verified by the result. At the present time the whole strength of the staff of attendants and the resources of the Baths are called into full requisition, and the cry, in reference to patients is, "Still they come."

The Wing recently added to the King's Bath, to all intents and purposes, contains a new series of Baths, in the development and perfecting of the best of what, for want of a better term, we call the Continental treatment. If there is much both externally and internally in the building which will not bear close criticism, the careful practitioner will use the Baths with patience and judgment, and after certain improvements they will become the grand auxiliary, in certain affections, which has long been a *desideratum* in the bathing establishment. But we would distinctly limit the meaning of our words to their literal sense. There is

always a danger of things which are new, or comparatively new, and good in themselves, degenerating into empiricism, if not quackery, and producing much evil. Massage, with all its corollaries and kindred treatment, will not, and is not intended to, supersede the old methods. The intrinsic value of the Continental treatment depends upon its judicious application, in combination with tried systems of imbibition and immersion, which have only been failures in so far as they have not been all and everything in thermal therapeutics.

The enormous volume of the Thermal Waters, practically inexhaustible, encourages the hope that further extension of the bathing system is possible and probable, and, as a condition of such extension, another great advance in city improvement may be made in the removal of many of the surrounding buildings, which grew up in times when light and air were less appreciated than they are at the present time. There is a German proverb, "*Unter den blinden ist der einäugige könig*," [among the blind, the one-eyed is king] the truth of which we recognise, whilst we must endeavour no longer to deserve the reproach it involves. Providence has bestowed upon us a vast gift, which brings with it correlative responsibilities. Let us devoutly pray to be guided by a large policy, an exemption from charlatanism, and from the rule of the one-eyed king.



## BATH & HER THERMAL WATERS.

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In making a few remarks upon Bath and her Mineral Springs, and their application in disease, I confess it is with feelings akin to diffidence I venture to do so. Although I am not treading on old lines, practical personal experience and deductive reasoning based upon rational grounds form the foundation on which my arguments are based in support of the decided views hereinafter to be expressed. I confess, however, that this diffidence is somewhat lessened after reviewing much of the Literature that has of late been thrown broadcast upon the British public. In the observations I may feel called upon to make I beg to disclaim entirely any feelings of a personal character. Such is not the intention of this paper ; its object is to endeavour to define, categorically, the real therapeutical value of the Waters. Bath is certainly attaining great celebrity for her Thermal Springs, and the trust of them is, I hold, peculiarly vested in the Medical Profession (a trust which is not a light one) ; every member, therefore, should feel the responsibility and jealously guard her interests, by neither exaggerating, on the one hand, their curative power, nor on the other by detracting from their efficacy.

It is unnecessary here to dwell upon the history of Bath, the Geological Strata that underlie her, or the

unique character of her buildings. To her Climate, however, I must allude, as too much stress, I consider, has been laid by some writers upon the comparative narrowness of her extreme temperatures, which is influenced, no doubt, by the fact of her being surrounded by hills on every side except the west towards the Bristol Channel. This mean temperature has been much dwelt upon, but I regard it as not an unmixed good, for her natural formation must necessarily render the air more or less stagnant, as anyone can see by journeying up her hill sides in early morn, when the valley in which the city is built appears to be enveloped in mist and smoke. Besides this stagnant air there is an humidity constantly arising from the River Avon.

I mention these points because her situation and her boasted mean temperature have been, in some works, considered highly desirable for many chest cases. I may be wrong, but I have always regarded such conditions as antagonistic to the cure of chest affections generally. There may be, however, one or two exceptions, such as Asthma, which depends for cure much upon the idiosyncrasy of the patient, and about which the wisest physician can hardly predicate beforehand ; for, as a rule, pureness of air and freedom from the products of combustion, accompanied by dryness, whether met with in warm climates, such as exist in the Antipodes, or in the higher altitudes where frozen snow and a brilliant sun are to be found during certain seasons, unaccompanied by thaws, are essential factors in the treatment of most chest cases.

Then, again, the Climate has been urged as good for Anæmia. The very opposite, I am sorry to say, is the result of my experience. I know scarcely any place



where Anæmia is more abundant, existing almost equally in those indigenous to our city, as in those who come to reside here.

As regards Climate, I unhesitatingly say that Bath is relaxing, especially during the months of June, July, and August; and I think common sense would draw such an inference from her position. This relaxing feeling becomes lessened as one ascends her hill sides, and at a certain elevation the air in some parts is bracing. Her worst feature is the humidity, which arises from the River Avon, and which I consider a barrier to the successful treatment of chest cases, particularly Phthisis, as well as other diseases, such as Anæmia, and certain nervous disorders which are much better treated in a more bracing atmosphere. Otherwise her hygienic condition will compare favourably with other towns, and is in no way prejudicial to the treatment of those diseases essentially amenable to the Bath Thermal Water treatment. The drainage of many of the old houses might be improved, but this is gradually being rectified. The houses are exceptionally good and clean looking, and are uniformly built of free-stone, with a fair uniformity in their architecture. The above remarks apply to the lower part of the city. On every hill side she is gradually extending her arms.

The history of Bath, as associated with her Thermal Springs, commences with the Legend of Bladud, and her relation with Solsbury belongs rather to the historian. During the Roman occupation of this country the Waters were held in high esteem, and the remains of the Baths of that period, which have survived the ravages of time, show that our conquerors were not insensible to luxury and taste, in accordance with the advanced state of

civilisation then existing at Rome. During the Saxon period the Waters were much sought after, and in the twelfth century were considered of great value in certain diseases of the skin, notably Leprosy. The vicissitudes of fortune seem to have been meted out to Bath as well as other places. She experienced her rises and falls until comparatively recent times.

Such is a very brief description of the Climate of Bath, and its unfavourable influence on certain diseases. To those persons who are not susceptible to the effects of undue moisture in the atmosphere and who object to wide extremes of heat and cold, her boasted mean temperature is doubtless of much import, and enables them to enjoy outdoor exercise which under other circumstances would be too hazardous—I allude particularly to those whose age, as it increases, renders their vitality proportionately low.

We will now consider the various diseases in which the Bath Thermal Waters are recommended. On perusing some of the books that have been written on the Waters, the first thing that strikes the reader is the multitude of diseases in which they are reputed to be serviceable. Disease, in its Protean form, is here supposed to meet a rival before which it must beat a hasty retreat; and one can only wonder that those who have ever drunk them, or experienced their external application, have succumbed to the decrees of Providence. I have said disease in its Protean form. This requires a certain qualification, as a general consensus of opinion exists that certain diseases of the Heart contraindicate their use, those particularly that are accompanied with degenerative changes; but as there is no rule without an exception, so daily experience teaches us regurgitation—stenosis, or even aortic obstruction are no

barriers against our Thermal treatment, provided always nature has been sufficiently kind to provide proper compensating changes in the cardiac walls, and the medical attendant is sufficiently alive to the necessity of assisting nature by the employment of cardiac tonics. Certain acute diseases are similarly classed, whilst Epilepsy and Phthisis are considered not to be benefited, but rather aggravated. Albeit, if the uric acid theory of Epilepsy has any foundation in fact, this disease should not be absolutely thus classed. A divergence of opinion, however, seems to exist with regard to Struma, one writer extolling the Bath Waters in its treatment, whilst another considers their use unadvisable. This divergence extends also to acute Gout, Rheumatism, Peri and Endo-carditis. I mention these facts to show that complete harmony does not exist in the use of these Thermal Waters. With acute Brain and Spinal diseases the roll of inadmissibles seems nearly complete, a sum total that represents only a fractional part of the category of ills mankind is heir to, leaving a balance of very large dimensions in favour of those that can be cured by the Waters; when we take into consideration that this list includes Gout and Rheumatism in all their shapes; nervous diseases, with the exceptions above enumerated, and Hysteria, whatever that may mean; diseases of women, Sterility (statistics on this point would be highly interesting); diseases of the respiratory and alimentary tracts, and Anæmia, as well as Syphilis, which is reported by one writer to be cured more easily on account of the Waters allowing larger doses of mercury to be given. This statement is opposed to my own experience and to what I have been taught from my earliest days, viz., to give the smallest amount of mercury

compatible with efficiency, and Mr. Jonathan Hutchinson, one of the greatest authorities on Syphilis, is now giving Hydrargyrum cum cretâ in one grain doses. Add to these a host of surgical affections, which I will not here mention, and disinfecting powers as well, whilst I may possibly have forgotten to name some important ones (in which case I hope the Bath Waters will forgive me). I feel the roll is, nevertheless, a very large one, almost eclipsing in number and variety a somewhat similar list claimed by the advocates of Mother Siegel's Syrup, Warner's Safe Cure, *et hoc genus omne*.

"ΑΠΙΣΤΟΝ ΜΕΝ "ΥΔΩΡ is the motto emblazoned on the heraldry of the Mineral Waters of the City of Bath, for hundreds of years famed for their curative powers in the above-mentioned diseases. Now, to find an all but panacea in hot springs, holding in solution various salts, *plus* their natural heat, is a boon indeed to the afflicted, requiring only unlimited faith on the part of the sufferer and assiduous attention on the part of the doctor to work the oracle, by healing the leper, making the lame walk, and restoring generally to perfect health the afflicted of mankind. It is well to ponder over these claimed and vaunted powers for the Bath Waters. Will they bear the test of reason, and does experience prove that as a remedial agent they are *facile princeps* in the cure of disease? It is no good advocating their use if, as a remedial agent, they are not at least equal or superior to others in the cure of any given disease. I understand that great faith is placed in the particular way the constituent parts of the solution are blended together. Analysis gives various salts in a very dilute state, I might say in ultra-homœopathic proportion, and, in addition to the manner in

which these various salts are blended, this dilute condition is highly appreciated and thought much of. Whether this reasoning is just is open to question. If it is not, and the value of these Waters is accentuated proportionately by the infinitesimal doses of the salts therein contained, I can only say that legitimate medicine will have to undergo a complete revolution in the mode of administering her therapeutics. Alas! I have to tell my readers my faith does not go so far as that of those who have preceded me as writers on the Bath Waters. For such unbelief I shall probably be denounced as a heretic. My present object is to deal with facts, to place the Waters in their proper light, and to claim for them an efficacy that is indisputable as regards treatment, apart from the good produced by mere change of residence.

Now, common sense tells one that the ascription of such exalted powers as above enumerated, when seriously advocated, approaches uncomfortably near, if it does not overstep, the border-land of charlatanism and quackery from orthodox medicine. I regard the Waters as I should any prescription suitable for a particular case, but not as one adapted for almost universal application. Medicine, I feel, has not yet arrived at those halcyon days when the Bath Waters, or any other Waters, have become a panacea, or very nearly one. I repeat, I am not a believer in their universal application. I consider their usefulness is within comparatively narrow limits. True, they have been lauded for hundreds of years, but the march of medicine gradually causing empiricism to give way to rationalism, justifies the statement that their beneficial use is limited. At the same time, I have no hesitation in saying, in properly selected cases, aided by a dietary

judicious in quality and quantity, as well as by the internal use of certain therapeutics, applicable to each particular case, as gauged by studying the idiosyncrasy of the patient, as well as the *fons et origo* of the malady in question, their use is highly advantageous, I may say, exceedingly valuable.

In the following lines it will be my endeavour to lay before the reader those diseases alone in which the Waters are most potent, passing over those which common sense and deductive reasoning clearly shew can be cured more quickly by those therapeutics whose actions are well known to be established as effectual. Nothing succeeds like success is a common saying, and the last two years, as regards patients, record a largely increasing number who have sought their use. Now, I am quite sure that nothing in the future will tend to raise their therapeutic value so much as by courageously laying before the public those diseases in which their application is of value; as nothing, I am equally sure on the other hand, will tend to lower them in the eyes of an enlightened profession by ascribing to them virtues they cannot possibly possess, an advocacy which cannot but bring disappointment and chagrin to the unfortunate sufferer, and well merited discredit upon the medical adviser. The shoals and quicksands of quackery are ever treacherously waiting to engulf the victim of misguided enthusiasm, and it behoves the medical profession to be well on its guard in avoiding the evil by over-zealous advocacy. I believe emphatically that a great future is in store for the Bath Waters, but that future depends not a little on the discrimination of the medical profession. With bathing arrangements second to none in Europe, Bath under such circumstances



need not fear the competition of foreign Spas. Her virtues will yearly become better known and appreciated, and the English people will be glad to find that in their very midst are healing Waters with every useful form of application, where the comforts of English life can also be obtained.

The Official Analysis of the Bath Mineral Waters is as follows.—

CONSTITUENT PARTS IN 100,000.		Merck. and Galloway.	Mackay Heriot, F.G.S., Captain, Royal Marine Light Infantry.			
		King's Bath.	King's Bath.	Hetling Pump.	Cross Bath.	
Calcium ... ..	Ca.	386·7	377	401	388	
Magnesium ... ..	Mg.	53·9	47·4	52·2	46·8	
Potassium ... ..	K.	39·8	39·5	31	37·5	
Sodium ... ..	Na.	160	129	137	140	
Lithium ... ..	Li.		Traces.	Traces.	Traces.	
Iron ... ..	Fe.	7·4	6·1	6·7	4·5	
Sulphuric Acid ...	S O <sub>4</sub>	1029·5	869	884	895	
Carbonic Acid (combined) ... ..	C O <sub>3</sub>	86·9	86	89	83·5	
Chlorine ... ..	Cl.	265·3	280	275	280	
Silica ... ..	Si. O <sub>2</sub>	42·6	30	39	38	
Strontium ... ..	Sr.		Traces.	Traces.	Traces.	
Alkaline Sulphides			Traces.	Traces.	Traces.	
Carbonic Acid Gas	C O <sub>2</sub>		65·3	80·4	51·5	
Total Solid Con- tents ... ..		2062·1	1864·0	1911·9	1913·3	
Specific Gravity...			1·0015	1·0022	1·602	

TEMPERATURE—King's Bath, 117° F. ; Hot Bath, 120° F.

The Nitrogen daily evolved from the springs amounts to about 250 cubic feet.

In an imperial gallon, Magnesia and Lime exist, as sulphates, in proportion of 35 grains of the former to 70 grains of the latter ; Chloride of Sodium and Carbonate of Soda, 17½ grains of the former to 14 grains of the latter. Arsenic also exists in very small proportion,  $\frac{1}{200}$

grain, and Iron, as Carbonate, in proportion of half-a-grain.\*

Natural Gases in an imperial pint, according to Attfield, are as follows :—

		Cubic Inches.
Oxygen Gas	...	·74
Nitrogen Gas	...	4·60

Carbonic Acid Gas, according to Mr. Gatehouse, existed in proportion of 1 in 12,500 parts at surface of water, whilst at the bottom of the well it exists as 1 in 6,500.

In the *British Medical Journal*, of October 27th, 1888, I published the result of experiments I had made with

#### THE BATH WATERS.

SIR,—The following points in connection with the Bath Waters may be of interest to some of your readers having patients afflicted with Chronic Gout. I have personally made the following experiments with them, and I consider them a great guide as to the principle upon which the waters act ; I do not imagine for a moment the results are invariable, but I think they clearly prove the value of the Bath Waters in Chronic Gout. First : Immersion of twenty minutes in the Baths, in a temperature varying from 97° Fah. to 100° Fah. causes a loss of weight from 3oz. to 10oz., increasing with the temperature, whilst during the packing process a further loss of from 6oz. to 10oz. takes place. The effect on the quantity of urine passed in the 24 hours following the immersion, as compared with the 24 hours preceding it, was practically in direct ratio to the amount lost during the immersion and the packing. The effect on the urine, on the days following the use of the Bath, as compared with that taken the day previous to it, as regards uric acid, urea, and chlorides, was as follows, as reduced from twelve days' observation—uric acid increased 3·2 grains ; urea decreased from 1·013oz. to ·80oz. ; chlorides increased from ·3oz. to ·36oz.

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\* At the suggestion of Mr. Pagan Lowe, Mr. Gatehouse carefully examined these waters for arsenic, and found that it existed in the above proportions, and probably associated with iron as arseniate of iron.



Experiments after drinking the Waters (one pint per day) showed that the amount of uric acid was increased 3·2 grains per following 24 hours, whilst the urea was diminished '113oz. and the chlorides showed a slight diminution, viz., '017oz. The analysis of the urine was carried out by Mr. Gatehouse, Public Analyst, and due regard was paid both to the amount of exercise and food, being nearly as possible equal before and after the bath as well as before and after drinking the Water.

I am, yours faithfully,

SAML. CRADDOCK.

1, Green Park, Bath.

Since the above experiments were made, I have repeated them. The urine was examined carefully every 24 hours, for three days previous to using the Immersion Bath ; an average was then taken. The urine was next examined under the influence of the deep Immersion Bath (at a temperature of 99° Fah., and for a period of 15 minutes), the whole amount being carefully collected during the following 24 hours, when the uric acid suddenly increased 1·41 grains. This increase, however, is not so marked as in my experiments conducted in October, 1888, which I account for by a smaller quantity of nitrogenous food being taken, and the weather being exceedingly sultry and hot, causing profuse perspiration on almost the least exertion. Still, the result is satisfactory, proving, as I have invariably found, that immersion in our Waters increases the excretion of uric acid by the kidneys. The analyses have, as usual, been carried out by Mr. Gatehouse, who was purposely ignorant of the factors at work.

**Gout.** From the Analysis of the Bath Mineral Waters, and from the experiments I have myself carried out, as given above, one might naturally infer their usefulness as a remedial agent in the treatment of Gout, and

practice entirely bears this out whatever may be the source of the increase of uric acid in the blood. I gather from the eminent authority, Sir A. Garrod, that in his opinion the fault lies with the excreting power of the kidneys. According to Dr. Haig, the uric acid formation is subject to but very little variation, and bears an almost constant ratio to the urea formed at the same time, that uric acid excretion can be controlled and varied in either direction by both food and drugs, and that these variations are due to alterations in its solubility. With regard to the use of the Waters in cases of Gout, it may, I think, be taken for granted that they are best given during the intervals of acute attack, inasmuch as we possess remedies, notably Colchicum and Opium, combined with saline aperients, that are capable of controlling the very severe pain so characteristic of the disease. It has been urged by Dr. Douglas Kerr, in his popular Guide, that the occurrence of an acute attack in cases of what he calls suppressed Gout is of good augury. I cannot but think such an opinion should be received with caution, as every fresh attack leads to a fresh deposition of urate of soda on the cartilages and ligaments of the joints affected, damaging them in proportion to the severity of the attack ; rather do I consider our object should be to avoid one occurring during the administration of the Waters, the chances of which, judging from my own experience, may be considerably lessened by administering at the same time Colchicum in varying doses according to the type of case, with or without Quinine, or using discretionally Salicylates, Phosphate of Soda, &c., our object being to eliminate from the blood the excess of uric acid contained in it. In addition to the elimination of uric acid by the

kidneys, a good deal is often removed by the skin during perspiration, for I have often heard patients say, after the perspiration following the bath has dried, they have felt a rough substance on the skin, which, although I have not analysed it, I believe to be urate of soda. This occurred in a remarkable degree to a patient of mine, sent to me by Sir A. Garrod, a typical case of Asthenic Gout. I include under the term Gout all its irregular manifestations, whether occurring in the cerebro-spinal, respiratory, or circulatory systems, or in the urinary, cutaneous, or alimentary tracts, &c. But I hold it as paramount, absolute proof should be elicited that the patient has a gouty diathesis, either by inheritance or as having acquired it, which we may call indirect testimony, the direct being absolute proof either by venesection or blistering, and the examination of the serum to ascertain if an excess of uric acid exists in the blood, or by Dr. Schetelig's (of Homburg) test used for determining the amount of free uric acid in the urine by passing it through a filter charged with uric acid, when the free uric acid conglomerates with the uric acid on the filtrate — *vide British Medical Journal*, June 1st, 1889. I feel strongly upon the necessity of proof being established on this point, as symptoms similar to many of these irregular manifestations of Gout are constantly met with in patients having no gout in their system and dependent upon eccentric causes acting probably upon the vaso motor system. The complications of Gout are given by Dr. Bristowe, as follows :—"In connection with the nervous system occur vertigo, headache, convulsions, mania, apoplexy, anæsthesia, paralysis, hyperæsthesia, lumbago, sciatica, and various other neuralgic pains; in connection with the vascular system, palpita-

tion, syncope, angina pectoris, and various forms of structural cardiac diseases; in connection with the lungs, asthma, bronchitis, emphysema; in connection with the gastro intestinal tract, dyspepsia, gastralgia, irregularity of bowels, and hæmorrhoids. Further, the liver not infrequently becomes indurated or cirrhotic, and jaundice, ascites or melœna may ensue. The kidneys, in a large number of cases, become contracted, granular, and incompetent, and the patient tends to suffer from the usual symptoms of Chronic Bright's Disease. The bladder becomes irritable or inflamed, concretions form in the urinary passages, a mucous or purulent discharge takes place from them, and, lastly, skin affections often arise, especially perhaps chronic eczema and psoriasis."—(*Bristow's History and Practice of Medicine.*)

**Lead Poisoning.** My friend Mr. Griffiths, House Physician to the Mineral Water Hospital, has kindly given me the result of his three years' experience in cases of Lead-poisoning, treated by the Bath Mineral Waters, as follows:—

"While admitting the variations in the susceptibility to which various individuals are exposed, to be numerous, it seems that the symptoms of Lead-poisoning differ considerably in proportion to the occupation of the patient.

"The cachectic appearance which many present is more constant in those whose occupation has forced them into a long connection with the causes direct and remote of the disease, whereas in those who apply for treatment soon after they notice the advent of the symptoms, and who have derived it from some accidental cause or other, appear frequently in the best of health. In short, it seems that this sallowness is a late symptom when it does occur.

"Not only have plumbers, painters, and others whose

occupation has no doubt brought on Plumbism with all its train of evils, been the victims of this disease under my observation, but what has particularly struck me has been the number of farm labourers whose occupation, one would think, is of such a character as to place them far out of the reach of the chances of developing this disease ; but, from information gathered, it appears that they are mostly cider drinkers, and further investigation shews that there is an indiscriminate use of white lead to prevent leakage of the barrels in which the cider is kept. I mention this in the hope it may lead to a prophylacticism in the matter.

“It may be summed up that Plumbism is a disease with perhaps as insidious an etiology as any, but, on the other hand, when once the cause has been ascertained and withdrawn, the prospect of improvement or cure can safely be guaranteed.

“Looking at the treatment from the point of view of therapathy, I might say it is satisfactory, but more so when associated with Faradism (which will be found most beneficial in the early stages) or the slow interrupted current, with good tonics, with or without Iodide of Potassium. Nearly all the cases treated in the Mineral Hospital at Bath with the Thermal Waters are supplemented with electricity ; the progress is very slow, but on the whole it is, as I said, satisfactory. Of course it is impossible to watch a case throughout the whole period in which improvement can be perceived, but in the time that patients generally stay in hospital, *i.e.*, two months, extensor weakness shows marked improvement, colour improves, but muscular atrophy remains to all appearances much the same.

“The question suggests itself whether improvement can be traced to a neutralisation of the poison in the system when the system becomes saturated, so to speak, from the Bath Waters, that is, whether an insoluble, and, therefore, harmless lead salt is formed by the action of the chemical ingredients of the Waters upon the salt of lead.

“ It has been noticed that patients who have previously been in this Hospital for Plumbism have returned and have been re-admitted for Chronic Gout, without showing the slightest traces of Lead-poisoning, thereby proving almost the fact that Plumbism is a predisposing cause of gout. Why one patient should be attacked with Plumbism on the one hand, or Chronic Gout on the other, seems an open question, seeing that the remote causes are the same. Still more peculiar does it seem why a patient who, having worked in lead, should have to pass through all the disagreeables of Lead-poisoning only to terminate in an attack of Gout.”\*

**Chronic Muscular Rheumatism.** Cases of Chronic Muscular Rheumatism, including surgical Rheumatism, are greatly benefited by the Bath Waters, as well as cases of Chorea following Acute Rheumatism; whether this arises from the many advantages attending their administration, such as their naturally high temperature, large volume of bathing Water, &c., or any inherent property in the Waters themselves, I cannot possibly say, although I incline to the view that in Muscular Rheumatism the appointments of our bathing arrangements are of more significance than the Waters themselves. It is, however, probable that the amount of natural gases—oxygen, nitrogen, and carbonic acid—that exists, according to Attfeld, in the proportion of .74 cub. in. of oxygen, 4.60 cub. in. of nitrogen, and 4.17 cub. in. of carbonic acid in an imperial pint, plays an equally important part as in Gout.† Anyhow, whatever may be the

\* Sir A. Garrod has proved there is an excess of uric acid in the blood in cases of Plumbism, but whether Gouty Patients are more susceptible to Lead-poisoning, or that the effect of the poison is to render the uric acid more insoluble, thus diminishing its excretion, is at present *sub judice*.—S. C.

† Daily amount of nitrogen evolved from the springs amounts to about 250 cubic feet.



*modus operandi*, I have witnessed most brilliant results that have fairly astonished me. I have given medicines that I have considered appropriate at the same time, but I have no hesitation in saying that in such cases, as an adjunct, they are, as a rule, most advantageous.

**Rheumatoid  
Arthritis.**

Rheumatoid Arthritis has been divided by Sir A. Garrod into two forms—acute and chronic, the latter being sub-divided into general and local. According to the same authority, neither the urine nor the blood, in uncomplicated cases, shows any abnormal variation, except in the acute stages, when the blood is more cupped. Dr. Money, however, states that *Glycosuria* is occasionally present, and the amount of uric acid changes far more than normally. Rheumatoid Arthritis is, however, a disease of debility, whether neurotic in origin, and the theory of its neurosis is accentuated by the increase of knee jerk in many cases, and especially by the observations of Dr. Spender, relative to localised sweatings, or occurring from debilitating origin, such as loss of blood, or consequent upon Acute Rheumatism. I am, however, inclined to believe Rheumatoid Arthritis is not a very frequent follower in the footsteps of Acute Rheumatism. There is a condition which I have frequently noticed following Acute Rheumatism, very much resembling Rheumatoid Arthritis in that the inter-ossei muscles become wasted, and the hand is bent to the ulnar side, but the enlargement of the ends of the bones is, I believe, more apparent than real, and I think it is highly probable such cases are often classed with those of a true Rheumatoid Arthritic type. To this affection, my friend Mr. Griffiths has suggested the name Rheumatic Arthritis. In these cases I believe the Bath Waters are

of service, but in pure Rheumatoid Arthritis I think they more frequently do harm than good. I know my opinion is at variance with many observers. My friend Dr. Fox tells me he has seen cases greatly benefited by the Bath Waters. I admit when the disease assumes an acute condition, as manifested by pain and rise of temperature, the Waters may relieve the same, as any other hot baths would, but I cannot see, on considering the character of the disease, and especially if Sir A. Garrod's view is correct, that the blood and urine are unchanged, how the Bath Waters can have any specific action, even to render the disease stationary, much more to cure it. If, however, Dr. Money's views are correct, that abnormal variations of uric acid occasionally occur, then, in such cases where it is in excess, the Bath Waters, by assisting in its solvency, may relieve considerably, or if, as the same author suggests, the cases in which localised sweatings occur their tendency is to take on a Rheumatic character and reveal themselves in the form of mutability, then the bathing, as practised at Bath, may be of service. I consider the question one of considerable moment, for, in confirmation of my own opinion, Sir A. Garrod has himself told me he has noticed frequently persons afflicted with Rheumatoid Arthritis very much worse after a course of the Bath Waters. To say the least, if some cases are benefited, whilst others are made worse, it is imperative that some classification should be made in order to avoid patients being chucked, as it were, hap-hazard into our Mineral Baths. I shall be glad to hear from those who believe in the benefit of the Bath Waters for this disease if they have tried the Waters without the aid of medicines—such as Arsenic, Cod Liver Oil, Quinine, &c. It may



appear somewhat presumptuous in me to lay down any fixed rules with our present knowledge of the disease relative to the use of the Bath Waters, but I would suggest the following classification :—(1.) Cases that are essentially neurotic in their origin and show no sign of assuming a Rheumatic character. (2.) Cases following Acute Rheumatism, or showing a tendency to mutability by taking on the Rheumatic type, and characterised by localised sweatings. I would urge that the Bath Waters should never be used in the former class, and in the latter only with the greatest caution and most careful supervision.

The deductions I would wish to draw from this paper are—(1.) That the diseases in which the Bath Waters are of advantage are exceedingly limited in number. (2.) The value of these Waters is much increased when used in conjunction with appropriate medicines. (3.) Gout, in all its phases, is the one disease in which their action may be considered specific, and by periodical treatment effete materials in the system that tend to cause organic changes in the heart, kidneys, and even the brain are combated, whilst the intervals of attack are not only widened, but the tenure of life is proportionately prolonged. And here let me also urge the necessity of treating Gout with decision on the appearance of the first initial symptoms, as *post mortem* examinations have revealed the fact that urate of soda deposits are often found in the articular cartilages of the joints without Acute Gout having become developed, which may be regarded as the initial stage of this painful disorder. (4.) In Chronic Muscular Rheumatism the excellent bathing arrangements are of much value. (5.) In Rheumatoid Arthritis great care should

be taken in the selection of cases, whilst those of a decided neurotic origin should be positively excluded. (6.) Cases of Lead Palsy may also use the Waters to advantage.

I feel the subject of this treatise at the present juncture is of the utmost interest not only to our Profession but to the public at large, a heavy percentage of whom are annually afflicted with Gout in some shape or other, either inherited or acquired, as well as with Chronic Rheumatism, and if we believe for such diseases our Waters are a veritable balm in Gilead the English have much cause for congratulation. But their efficacy requires to be stamped in no unmeasured terms with the unbiassed testimony not of one or two Medicals but by the whole Profession, and this testimony should be accompanied by no divergence of opinion as to the real power of our Waters (limited although I believe them to be in their action) by categorically publishing a list of those diseases, and those only, in which their therapeutic value is supreme.

I have ventured these remarks for the credit of the Bath Waters, as well as for the welfare of this ancient and beautiful City.

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By the kind permission of Sir Alfred Garrod, I append the following table exhibiting the differential diagnosis of Gout, Rheumatism, and Rheumatoid Arthritis, as given in his work on Gout and Rheumatic Gout :—

*Diagnosis of Gout, Rheumatism, Rheumatoid Arthritis.*

Gout.	Rheumatism.	Rheumatoid Arthritis or Rheumatic Gout.
Strongly hereditary.	Less so than gout.	Much less so than gout
Much more frequent in males.	More frequent in females.	More frequent in females.
Seldom occurs before puberty, and generally much later.	More frequent in the young, and before middle age.	Occurs both in young and old.
Induced by high living, wine, and malt liquors.	Occurs in the weak, and not caused by wine, &c.; excited by cold and damp.	Often induced by depressing causes, and sometimes excited by cold; not induced by wine, &c.
One or more of the smaller joints particularly affected in early attacks, and especially great toe.	Large joints more affected than small, usually several in number.	Large and small joints about equally affected.
Great pain, œdema, and desquamation of cuticle.	Pain less intense; seldom œdema.	Less pain; much swelling, and often some œdema.
Does not induce acute inflammation of the structures of the heart	Often causes acute pericarditis and endocarditis.	No tendency to cause inflammation of the heart.
Febrile disturbance moderate.	Febrile disturbance great; more than can be accounted for by the local inflammation.	Generally but little febrile disturbance.
Paroxysms periodic in early attacks.	Attacks not periodic.	No periodicity. The disease progressive.
Early attack lasting but a week or ten days.	Attacks generally longer in duration than in gout.	Duration of attacks indefinite.
Blood rich in uric acid.	No uric acid in blood.	No uric acid in blood.
Constant deposit of urate of soda in inflamed cartilages and ligaments.	No deposit of urate of soda; no ulceration of cartilages.	No deposit of urate of soda; ulceration of cartilages.
Often leads to kidney disease.	No tendency to cause kidney disease.	No tendency to induce kidney disease.
Often produces chalk-stones externally.	Never causes chalk-stones.	No chalk-stones produced, but often much swelling of joints.

## DESCRIPTION OF BATHS IN USE.

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- (1.)—IMMERSION BATHS, which contain over 800 gallons of water, and are about  $4\frac{1}{2}$  feet in depth.
- (2.)—THE RECLINING BATHS, each holding about 150 gallons.
- (3.)—THE AIX-LES-BAINS MASSAGE DOUCHE BATH.
- (4.)—BATHS IN WHICH THE WATER IS PULVERISED, and, by means of Siegle sprays, may be used for inhalation, &c.
- (5.)—THE BERTHOLLET OR NATURAL VAPOUR BATH, which may be used either generally or locally practically to any portion of the body ; arrangements are also made for inhalation of the ordinary vapour.

With the Immersion and Reclining Baths, the wet douche may be used at a temperature varying from  $99^{\circ}$  to  $105^{\circ}$ . Arrangements are also made for the use of the dry douche ; although there are rooms specially appointed for this system of bathing. The question is often asked by the profession which is the best system ? I can only reply, they all have their merits. For Chronic Gout, *cæteris paribus*, I prefer the deep Immersion Bath ; cases, however, occasionally present themselves which cannot tolerate immersion, headache, giddiness, and fainting, &c., supervening, such will often bear the Berthollet with impunity, which, as above stated, has the advantages of

being applied either generally or locally. The Douche may be applied as a rule with impunity, either alone or as an under current; it is a very valuable addition to the deep Immersion and Reclining Baths, is especially suitable to cases of Chronic Inflammation, which have led to thickening and limitation of movements of affected joints, and, on account of its stimulating action, tends to promote the absorption of these inflammatory products through the agency of the lymphatic system of vessels.

The Berthollet Bath is advantageous in the dry skin diseases, as Eczema and Psoriasis, and may be used in cases of Acute Gout of the upper extremities, or even of the lower if the patient can bear removal, the vapour being applied locally and the affected limbs, after the bath, wrapped in cotton-wool and a flannel bandage.

The Aix-les-Bains Douche with Massage, is especially adapted to cases of Chronic Rheumatism, and to a few cases of Rheumatoid Arthritis, also to joints and muscles that have become stiff after attacks of Acute Gout.

**Period of year for Bathing.** Patients may bathe all the year round in Bath, but the months from September to the end of May are the best, as Bath, during the months of June, July, and August, is relaxing for the ordinary run of patients.

**Time of day.** During the winter months I much prefer patients bathing late in the afternoon; such practice does not interfere with the ordinary amusements of the day, as they return home in a wheel-chair, dine, and go to bed, without the risk involved by going out in the air after early bathing. Of course bathers in the summer months may undergo the treatment

in the early part of the day, taking the precaution of remaining in the house for an hour or so after the bath in order to allow the body gradually to cool. There is a wide difference, however, in a patient being over-heated from absorbed caloric, and that from undue exercise, the one tending to prevent tissue waste whilst the other increases it ; acting on this recognised fact, I not infrequently allow patients who can walk briskly to walk to their homes, instead of going there in a wheel-chair. With the old and decrepid the case is very different, their absorbed caloric may rapidly become exhausted, when the chances of catching cold will be greatly increased.

### **Drinking the Waters.**

The Waters should be drunk slowly, and to the extent only of 4 oz. to begin with ; if no uncomfortable feelings result, such as weight in the stomach, headache, nausea, &c., the dose may be increased gradually to half-a-pint, or even more. The time for drinking them is one draught before breakfast, or about two hours afterwards, and a second about 4 p.m., or, on bathing days, at the half time of the bath. When practicable gentle exercise should be taken immediately after the potion. They should be drunk in all cases that can tolerate them ; they are tonic in character, and as such are useful in Chronic Rheumatism and Rheumatoid Arthritis ; in Gouty Dyspepsia a large potation the first thing in the morning is of considerable service ; by its alkaline action on the blood it tends to keep the bile fluid, and in proportion to the quantity drunk flushes out the kidneys without acting as a diuretic in the strict medical sense of the term, as has been alleged by some writers. Their internal administration is to be recommended also in certain skin diseases

and lead palsy, their action depending upon the iron and arsenic they contain, and especially, as determined by Mr. Gatehouse, their combination as arseniate of iron. Under the name of Sulis Water, the Waters have been aerated with carbonic acid by Mr. Cater, the carbonic acid having the double advantage of aerating the waters and preventing the carbonate of iron contained in them from depositing ; they are supplied as follows :—50 glass bottles, 27s. per case, 7s. per doz. ; 100 glass half bottles, 42s. per case, 5s. 6d. per doz. ; 100 glass quarter bottles, 32s. per case, 4s. per doz. This is a great advantage, as it allows patients to continue in one form this treatment after leaving off a course of the Waters.

### **MASSAGE.**

The subject of Massage is a wide one in its entirety, and, as such, I have no intention at present of entering upon it. I will confine my remarks to its effects as an associated remedial agent in the diseases under consideration, after explaining what is meant by Massage and its mode of application.

Dr. Murrell, in his work on Massage, describes it as “a scientific mode of treating certain forms of disease by systematic manipulation,” a system which is no novelty, and, metaphorically speaking, is “as old as the hills ;” a system which has for its object the increase of the flow of lymph, as well as the increase of tissue metamorphosis ; it stimulates the capillary circulation, and the functions of secretion and absorption through the agency of that portion of the nervous system immediately under action, in other words, by acting locally on the vaso motor system. The mode of its application involves two points,



first, the direction in which it should be applied ; secondly, the kind of massage that should be used. The direction in which it should be applied is centripetally, *i.e.*, from the periphery towards the heart, which is in the direction of the current in the venous circulation and lymphatics. The modes of application are described as *effleurage*, *petrissage*, *massage à friction*, and *tapotement* : the kinds with which we are at present chiefly concerned are *petrissage* and *massage à friction*, inasmuch as our object is to act for the most part on deeply-seated structures. Dr. Murrell, to whom we are indebted for the best systematic English work on Massage, describes *effleurage* “as a stroking movement made with the palm of the hand passing with various degrees of force over the surface centripetally,” and, quoting from Beuster, of Berlin, he describes it “as consisting of slow, gentle strokes in a centripetal direction along the course of the veins and lymphatics made with the palm of the hand and with the pressure intermitting so as to cause passive peristaltic action.” *Petrissage* consists in pinching up a portion of muscle or other tissue with both hands, or the fingers of one hand, and submitting it to firm pressure, rolling it at the same time between the fingers and subjacent tissues. In *massage à friction* Beuster directs that the finger tips of one hand should be held at right angles to the axis of the limb and rubbed across and across in narrow ellipses, while the fingers of the other hand should stroke parallel to the axis of the limb. *Tapotement* is practically a tapping made with the tips of the fingers or other parts of the hand. Dry massage is to be preferred, for, as Murrell says, “(1) You get better contraction of the muscles, and consequently a greater flow of lymph ; (2) Electrical



currents are more readily developed in the tissues ; (3) There is greater elevation of temperature in the part ; (4) You do not make the patient in a mess."

Such is a brief description of Massage and its modes of application. We have now to consider how far it will help to cure or mitigate those diseases of which we are treating. I wish, however, first to state my conviction that if Massage is of such service as we believe it to be, its effect for good is accentuated after the use of our Thermal Waters. As regards Gout it is no uncommon thing, but rather the rule, to find after an acute attack, a patient complaining of stiffness in the joints and muscles of the limb affected, a natural consequence of inflammation, leading to infiltration of tissues. Let us now consider the morbid changes following acute gout somewhat in detail, and see if a conclusion can be drawn that Massage in such cases is likely to be of service. These morbid changes are as follows, and occur in the following order—First, the articular cartilages become affected, commencing with opacity from deposits of urate of soda, which gradually but surely, unless checked, end in their disorganisation ; secondly, the synovial membranes become affected, and subsequently the tissues immediately surrounding the joints, which not infrequently extends some distance up the tendons and even beneath the periosteum of bone. These deposits are accompanied from time to time with all the symptoms of acute inflammation, pain, heat, swelling, &c., with such resulting changes.

A few words on the pathology of Gout may help our argument. Three theories have been advanced, viz. (1) The theory propounded by Sir A. Garrod, who regards the kidneys as at fault, and incapable of excreting properly

uric acid, thereby causing its retention in the blood, whilst the deposit of urate of soda in and around affected joints occurs subsequently ; (2) The late Dr. Murchison regarded the liver as the organ most responsible for this increase of uric acid in the blood ; (3) Dr. Ord and others believe there is some latent cause in the constitution of a person developing gout which tends to cause degeneration of the fibroid structures of the body, having as its chief feature the deposit of urate of soda.

We gather from these opinions that joints of gouty patients become inflamed through the agency of urate of soda deposits, producing a tendency to stiffness, and ultimately disorganisation of joints. Will Massage help to remove this condition or moderate its effects? I have no hesitation in saying that I believe it will in conjunction with the use of our Baths, whether the urate of soda deposits follow or precede its presence in the blood, Massage properly applied will for reasons above mentioned tend further to promote its absorption ; and as I have proved by experiment the Bath Waters increase the excretion of uric acid by the kidneys, and thus tend to clear the poisoned blood regardless of the cause of this increase. Absorption is promoted by Massage, elimination by the kidneys, through the help of baths and medicines. Our object is to get rid of the urates not only from and around the neighbourhood of joints, but to purify the blood as well by promoting their excretion.

Chronic Rheumatism may be a sequel of the acute, or it may come on insidiously, attacking joint after joint at varying intervals of time, or the attacks may be limited to one or two joints ; if unrelieved it is generally a progressive disease, leading either to effusion in the cavities

of joints or in the structures around them ; the fibrous sheaths of muscles and the sheaths of nerves are apt also to become involved. Will Massage tend to relieve such morbid conditions ? I say emphatically that it will, as the following experiments of Professor von Mosengeils, related by Murrell, I think conclusively prove : " He took a number of rabbits and injected into their knee joints a syringeful of Indian ink ; Massage was performed at intervals on the right knee, whilst the left was untouched ; at the expiration of 24 hours or more the animals were killed, and the tissues on both sides were carefully examined. The left knee joint that had not been massaged was distended with fluid, whilst the right, which had been massaged, was found free from effusion, and the lymphatic glands on this side were full of particles of Indian ink, the corresponding glands on the unmanipulated side remained unaltered," proving that Massage promotes absorption through the lymphatic system.

Rheumatoid Arthritis cases in which Massage would be of service are exceedingly few in number. The disease first shows itself in the cartilages and synovial fringes of joints ; the former are feebly supplied with blood, and its tendency is to lay bare the subjacent bone, whilst the synovial fringes are prone to ossify, and the whole joint or joints attacked are apt to become dislocated and immovable. This disease is decidedly difficult under any circumstances to stop, much less to cure, and from its morbid anatomy not likely to be benefited by Massage, excepting possibly, in a very limited number of cases following in the wake of acute rheumatism.

Lead Poisoning.—In cases of the lead poisoning of muscles I unhesitatingly advise Massage, combined with electricity (Faradism), inasmuch as great muscular

atrophy is a prominent symptom which Massage, by means of its therapeutical action, ought to remedy, as it must help Faradaism by giving exercise to wasted muscles and improving their nutrition.

It would be foreign to my purpose to prosecute the subject of Massage further, as my object has been to prove the use of the Bath Waters in Gout and Chronic Rheumatism, and that their use is increased under the influence of Massage ; my argument extends also to cases of lead poisoning of muscles, whilst cases of Rheumatoid Arthritis require to be carefully selected before they are placed under this combined treatment. For the application of Massage in its entirety I must refer the reader to special works on the subject.

*1, Green Park ; October, 1889.*

# THE BATHS.

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## THE KING'S AND QUEEN'S PUBLIC AND PRIVATE BATHS.

### PRIVATE BATHS AND DOUCHES.

The upper storey is occupied by Private Baths only, and the basement by second class and Public Baths; they were built according to the plans of Mr. Baldwin, the foundation stone having been laid May 10th, 1788. On the upper storey there are four Baths, of which one is a Reclining Bath, lined with white porcelain tiles, fitted with copper traps, by means of which it is supplied with hot and cold Mineral Water; the other three are large Baths similarly lined, each of which will hold 864 gallons of water, with a depth of four feet six inches. In each there is a Douche for the local application of the Water, if required, while the bather is in the Bath. The Baths are sufficiently large to afford space for the free movement of the bather, and occupy the greater portion of the Bath rooms, which are twelve feet long, seven feet wide, and eleven feet high. The hot water is thrown up from the bottom part of the Bath, and the cold water is turned on from a tap above the steps, and, as it flows over them into the Bath, mingles with the hot water. To all the Baths

convenient and comfortable dressing-rooms and closets are attached, containing every requisite for the invalid. There is also a

#### DOUCHE ROOM.

This room has connected with it two dressing-rooms, which are for the local application of the Water, or "dry douching," so called in contrast with the Douche used in the Bath. The distribution of the Water may be regulated by the attachment of large, small, or perforated nozzles to the Douche pipe, so that a larger or smaller stream may be made to descend on the part douched, or it may be more gently applied by means of a perforated or rose nozzle, termed feather Douche; tepid and cold water are also provided as well as the hot Mineral Water. These can all be applied by graduation.

#### PUBLIC OR KING'S BATH.

This Bath is reached by descending a staircase near the vestibule entrance to the Pump Room. This is the King's Bath, which is open to the sky. It is about 59 feet in length and 40 in breadth, and, when filled, it is computed to contain 56,332 gallons, with a depth of  $4\frac{1}{2}$  feet.

On the northern side there are recesses, which admit of being partially closed in; the end one contains a powerful hot Douche. The colonnade has recently been removed. On the south side there is a stone chair and bench, the former bearing the following inscription, "Anastasia Grew gave this, 1739." Above the stone chair is a mural tablet recording the gift of an ornamental balustrade for the Bath, by Sir Francis Stonor, in 1697, the ornamental

portion of which between the balusters was restored a few years ago, and a balustrade of the same pattern placed on the eastern side of the Bath.

This Bath may be regarded, historically, as the oldest in the system of Baths. It was, undoubtedly, in the time of the Romans, the most capacious as well as the most luxurious of all the noble series of Baths then constructed; and so, of the open or uncovered Baths, it continues. Beneath the Bath the spring rises over a surface of about 40 feet square. Around these springs the Romans formed a reservoir, octagonal in shape, 40 feet at its narrowest and 49 feet at its widest part. The walls forming the reservoir were three feet in width, built of solid block stone, and lined with lead, varying in thickness from five-sixth inch to one inch. From this reservoir the water was conveyed by pipes and ducts to the various Baths around. The destruction which followed the departure of the Romans caused these Baths to be filled with *débris*, and in course of time this formed a foundation, through which the water forced its way. Formerly a stone floor was laid, so perforated as to admit the rising springs. This floor, with the accumulation of the *débris* beneath, has been removed down to the Roman level, and the Roman reservoirs again serve their original purpose. The whole space is covered by arches of cement and concrete, the upper surface of which forms the floor of the present King's Bath.

#### THERMAL VAPOUR BATHS.

In order to utilise the vapour from the Springs, rooms have been fitted up adjoining the King's Baths with all the appliances which science can suggest and experience



recommend. In one corner of an apartment, which is tiled throughout and laid with a tessellated pavement, is a box-like structure. Herein a patient may take his seat, the whole of his body, with the exception of his head, being subjected to the action of vapour that rises in full volume direct from the springs beneath. Through a central reservoir or drum called a "Berthollet," the vapour is conveyed in various ways, being either inhaled or locally applied by means of various ingenious contrivances. In certain cases of Gout and Rheumatism, and some forms of skin disease, this vapour treatment has proved advantageous. At no other Spa, either in England or on the Continent, can the water or the vapour be used to such advantage, and a higher temperature can be gained here than elsewhere—viz., from 112° to 115°.

At the eastern end of the corridor there is an inclined passage for wheel-chairs, which is approached by an entrance in Abbey Place, communicating with the Abbey Yard.

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## THE NEW WING AND CONTINENTAL TREATMENT.

The new wing was formally opened on the 13th day of June, 1889, by H.R.H. the Duchess of Albany, on which occasion there was great rejoicing, the city being decorated with effective taste.

The system of Continental treatment constitutes an entirely new department. The approach to the Baths is from the old circular lobby by a slightly curved corridor leading into a cooling room, 42 feet long by 16 feet wide,



lighted from the top. Out of this there are three Baths for the process known as the Aix-les-Bains Douche, two of which are 14 feet by 10 feet, having two dressing rooms attached to each.

From the Cooling Room is also entered the Inhalation Room, 20 feet by 19 feet, wherein vapour is produced by jets of water playing upon heated plates of metal, and may also be produced by a fountain of hot Mineral Water, atomized by striking upon a metal umbrella. The adjoining room is the Humage Room, 18 feet by 19 feet; it contains six separate apparatus for atomizing Bath Mineral Water, or other prescribed water, by the assistance of steam, for the throat; also four apparatus for Douches—regulated by a thermometer, for spraying the nose, the eye, or throat. On the south side of the Cooling Room is a Reclining Bath fitted with a Lumbar Spray, also Regatz Reclining Bath, with Shower and Douche. These rooms, as well as the others, are lighted high up under arched ceilings, and are tiled throughout, having handsome Roman Tesseræ flooring. The fittings and appointments are luxurious. From the large Cooling Room a corridor leads to three large deep baths, one of which is fitted with hydraulic power attached to a chair, for placing patients in the Bath or lifting them out again. There is also a Reclining Bath and a Regatz Reclining Bath, fitted with Shower-graduated Enema and Sitz-Douche. At the end of the corridor is an apartment in which dry heat, to a temperature of  $150^{\circ}$ , or a vapour for the whole body can be given, together with Massage, Needle Douche, Sitz, also Lumbar-heated plate, with hot Douche.

A grand oak staircase leads from the corridor down to the excavations of the old Roman Baths, the enclosing of

which has been the subject of so much discussion. At the foot of this staircase will be found one Reclining Bath, with hydraulic power attached, for lifting a patient, in a reclining position, in and out of the Bath ; this Bath is centrally placed for Massage, and is enclosed by curtains for a Scottish Douche. There are also two Reclining Baths, and an Aix Massage Bath for one Doucheur ; this room is fitted with a Cadet's Sitz Bath. Leading from the upper storey is a lift for taking Bath chairs or invalids from the upper to the lower level.

The construction of these Baths gives a pre-eminence over every other English and Continental Spa, and so far completes the system of the bathing establishments in this historic city, on a scale of unrivalled magnificence.

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## ROYAL PRIVATE AND HOT BATHS.

### THE HOT BATH.

Immediately opposite the old Hetling Pump Room are the Royal Private Baths and Hot Baths.

The Hot Bath, which is an open Bath, is situated in the centre of the Royal Private Baths. The entrance to it is at the south end of Hot Bath Street. The bath is of an octagonal form and its architectural embellishments are well deserving of notice. At the four corners of the Bath there are small seats for the bathers, and there is also a Douche pump on its northern side. The temperature of the spring, which rises seventeen feet below the pavement of the Bath, is from 105° Fah. to 120° Fah. The spring yields one hogshead and a half of water a

minute, and supplies the Royal Private Baths as well as the Hot Bath, and also a Bath in the Royal United Hospital, in its immediate vicinity. When full, the Hot Bath is computed to contain about 7,570 gallons of water, having a depth of four feet and a half.

#### THE ROYAL PRIVATE BATHS.

The chief approach to these Baths is under a semi-circular covered way from an entrance in Hot Bath Street, opposite to the Hetling Pump Room. There are four principal Baths.

The first, the Reclining Marble Bath, or "Bladud," as at Buxton, is a small Bath lined and paved with marble, the surrounding space being laid down with encaustic tiles, and the rest of the Bath-room decorated in keeping with its own arrangements. Apparatus is here fitted for Massage Douche and a Needle Bath, and in the dressing-room adjoining is a private lavatory and every requisite convenience, a door separating it and the Bath-room from the rest of the building. The second, or Alfred's Bath, contains, when filled, 724 gallons of water, with a depth of four feet and a half, and has a dressing-room attached to it. Adjoining this room, is another dressing-room communicating with a Douche Room, having the necessary arrangements for the use of the graduated Douche, the water from which is discharged by a pressure equal to six pounds on the square inch. Beyond this is a dressing room connected with the third or Chair Bath, containing an arm-chair, attached to a crane, by means of which a helpless invalid can safely be let down into and raised up from the Bath. This Bath, when filled, contains 702 gallons of water, with a depth of four feet and a half.

Adjoining this Bath is a dressing room having in it a Shower Bath, the room being connected with a small chamber containing the Lavement apparatus and ascending Douche. Adjoining the last-mentioned room is the fourth, or Edwin's Bath, capable of containing 716 gallons of water, with a depth of four feet and a half, fitted with graduated Douche and Shower with sub-aqueous Douche. Attached to it are a dressing room and Douche apparatus.

All the above-mentioned Baths in this establishment have arrangements in them for the use of the Douche.

Near this Bath is a small lobby leading into a corridor, at the upper end of which is a room containing a large Reclining Bath.

#### TEPID SWIMMING BATH.

By turning to the right after leaving the last mentioned Bath, a passage leads to the large Tepid Swimming Bath, which was built in 1829, after a design by Mr. Decimus Burton. Its form is an oval of 62 feet by 23 feet. On the eastern side are arranged six dressing-rooms and one large common dressing room. From each of these rooms a flight of steps leads into the Bath, which contains when filled about 37,225 gallons of water, and is  $4\frac{1}{2}$  feet deep, and with cold Shower and Spray, under the control of the attendant. The water is supplied from the spring in the King's Bath, and from the cold water reservoir; its temperature is 88° Fah. The Bath is lighted during the daytime by windows at the side, and from above by three lantern domes, with openings to the external air; at night the dressing rooms and the Bath are lighted by gas. There is a separate entrance to this Bath through the piazza in Bath Street, opposite St. Catherine's Hospital. It is closed on Thursdays at 1 p.m.

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## THE NEW ROYAL PRIVATE AND SWIMMING BATHS.

### THE PRIVATE BATHS.

The ground plan of these Baths—which are attached to and form part of the Grand Pump Room Hotel building—is a long parallelogram, divided in the centre by a corridor lighted at the top, with Baths and dressing rooms arranged on each side.

There are six bath rooms, each fifteen feet long by eleven feet and a half high. The Baths—which in form resemble those of the King's and Queen's Baths—are of a T shape, and measure in length seven feet two inches, and at the broadest part ten feet, and four feet eight inches deep. They are sunk beneath the level of the Bath-room, and are entered by a flight of Sicilian marble steps, and fitted with graduated Douche (as at Vichy) and Shower, also Hot Mineral Douche under water. The Baths are lined, and the floors laid, with buff coloured glazed tiles.

To each bath room a dressing room is attached, eight feet wide, eleven feet and a half long, and twelve feet high, with a water-closet adjoining.

There are three Reclining Baths and Douche. Each, when filled, contains 150 gallons of Mineral Water. Dressing rooms and water closets are attached to these Baths.

There are two graduated Local Douches, with Feather and Needle Douche attached, each having a private dressing room and water closet attached.

### THE SWIMMING BATH

is at the end of the corridor. It is a magnificent Bath, of enormous capacity, sumptuously appointed, and may fairly challenge comparison with any similar Bath in the world. It is lighted from above by means of an open iron and glass roof. Attached to this Bath are seventeen dressing rooms, each eight feet square and nine feet high. There is also a large dressing room, sixteen feet in width and seventeen feet in length, reserved for the use of ladies.

There is a ready communication from the Pump Room Hotel, on the ground floor, with the entrance lobby of these suites of Baths, and a lift, by means of which infirm invalids can be brought down from the landings of the Hotel to a level with the corridor, through which, in a merlin chair, an invalid may be wheeled to the Baths or Douches.

The Bath is open for gentlemen on Tuesdays (till one), Thursday, and Saturdays, and Sunday mornings. For ladies on Mondays, Wednesdays, and Fridays.

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### THE CROSS BATH.

*(Bottom of Bath Street.)*

This is a cheap Public Bath, of an irregular form, fitted with fourteen dressing closets. The spring supplying it rises at a depth of fourteen feet below the flooring of the Bath, and yields half a hogshead of water a minute. The temperature of the water at the depth above mentioned is 104° Fah.; that of the Bath generally, 96° or 98° Fah. The present edifice was erected from plans by Mr. Baldwin in 1797, altered 1858, and enlarged 1887. It is reserved for females Thursdays.

# TARIFF FOR THE BATHS.

## NEW ROYAL BATHS.

					PRICES.
					s. d.
First-class Deep Bath	...	...	...	...	2 6
Ditto with Douche or Shower	...	...	...	...	3 0
First-class Reclining Bath	...	...	...	...	2 0
Ditto with Douche or Shower	...	...	...	...	2 6
First-class Reclining Bath with Massage (1 Doucheur)...					3 6
Dry Douche ...	...	...	...	...	2 0

Attached to these Baths is a Swimming Bath, daily supplied with fresh Mineral Water, Temp. 82 to 84 Fahr.

## KING'S AND QUEEN'S BATHS.

### FIRST FLOOR.

First-class Deep Bath	...	...	...	...	2 6
Ditto with Douche or Shower	...	...	...	...	3 0
First-class Reclining Bath	...	...	...	...	2 0
Ditto with Douche or Shower	...	...	...	...	2 6
Ditto with Lumbar Douche	...	...	...	...	2 6
Ditto with Ascending Douche	...	...	...	...	2 6
Ditto with Special Douche	...	...	...	...	3 0
Ditto with Massage (1 Doucheur)	...	...	...	...	3 0
Needle (or Douche en cercle)	...	...	...	...	2 0
Ditto with Deep Bath	...	...	...	...	3 6
Vertebral Douche, 1s. extra	...	...	...	...	1 0
Moist and Dry Heat, per hour	...	...	...	...	2 6
Ditto with Deep Bath	...	...	...	...	3 0

### GROUND FLOOR.

First-class Reclining Bath	...	...	...	...	1 6
Ditto with Scottish Douche	..	...	...	...	2 6
Reclining Bath with Massage	...	...	...	...	1 9
Massage Bath ...	...	...	...	...	1 6
Scottish Douche alone	...	...	...	...	1 0
Second-class Reclining Bath	...	...	...	6d. and	1 0



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### MASSAGE AND VAPOUR BATHS, BOUILLON, AND PULVERISING ROOM.

Massage Douche (Aix-les-Bains system)	2 Doucheurs	...	3	6
Ditto	ditto	1 Doucheur	...	2 9
Berthollet, Natural Vapour Bath	...	...	...	2 6
Ditto with Massage (1 Doucheur)	...	...	...	3 0
Massage in Reclining Bath and Douche (1 Doucheur)	...	...	...	2 6
Bouillon Room, if taken alone	...	...	...	1 0
Pulverization for Nose, Eyes, Ears, Face, or Throat	...	...	...	1 0
Sitz Bath (special)	...	...	...	2 0
Special Medicated Baths	...	...	...	3 6

### ROYAL BATHS.

First-class Deep Bath	...	...	...	2 0
Ditto with Douche	...	...	...	2 6
Second-class Deep Bath	...	...	...	1 6
Ditto with Douche	...	...	...	2 0
Reclining Bath	...	...	...	1 6
Ditto with Douche	...	...	...	2 0
Shower Bath	...	...	...	1 6

PORTABLE BATHS at a temperature not exceeding 106 Fah. supplied at private residences by arrangement.

### CHARGES FOR DRINKING THE WATER.

	Single glass	...	...	...	2d.	
Per Week	...	...	1 6	Per Six Months	...	15 0
„ Month	...	...	5 0	„ Twelve Months	£1	
„ Three Months	...	...	10 0	„ For a family	...	£2

At Hetling Pump Room, 1s. per week.

In addition to the above Charges there is a small fee payable to the Attendants.







